Berkeley Hunt Society, a competitive examination in agriculture, and especially in the arts of hedging, thatching, judging stock, &c., is held. The examination is open to young farmers and labourers of the district, is partly written, partly practical and oral. Three valuable prizes are offered and certificates are awarded for satisfactory work. The fall in prices and the scarcity of labour have made farmers less careful in details than formerly, and as a consequence their labourers are less skilled. Any kind of competition which revives the interest of masters and men in arts so necessary to good farming is much to be commended. If country districts held more competitions of this sort, if skill in rural arts were fostered with a tenth of the energy bestowed on foxes or football, we would hear less of rural depopulation and of agricultural depression.

The last annual report of the Glasgow and West of Scotland Technical College shows that the high standard of the work accomplished in the institution is fully maintained. During the session 1901–2, the number of students in the various departments of the College reached 5651, of whom 596 were students studying in the day technological courses. Although the evening classes were attended by 4174 men and 220 women, the governors were unable to find room for some hundreds of students, who were perforce refused admission. In view of this serious want of accommodation, we are glad to learn that contracts, amounting to about 130,000*l.*, have been entered into for the erection of the first section of the proposed new buildings. The section will comprise about seventy-two per cent. of the whole structure, and fully three years will be occupied in its erection. It is anticipated that the new buildings, as planned, exclusive of equipment, will cost about 180,000*l.*, to which amount must be added 30,000*l.* for the site. The building fund, as shown by the list of donations given in an appendix to the report, now stands at 175,000*l.*, to which the Scottish Association of Master Bakers has contributed nearly 2500*l.*, the Glasgow Building Trades' Exchange about 650*l.* and the Trades' House and Incorporations of Glasgow an amount approaching 2000*l.* Nor is this the only evidence of the keen interest taken in higher education by Scottish manufacturers and merchants, for the report contains long lists of firms who have either given facilities for parties of students to visit works or have supplied the College with gifts of apparatus, specimens or laboratory material. That the claims of pure science have not been overshadowed by the pressing needs of the technological studies is shown by the gift of 5000*l.* from Mrs. John Elder for the provision of lectures on descriptive astronomy. There is evidently a great future in store for this deserving Glasgow institution.

SCIENTIFIC SERIAL.

Journal of Botany, October.—From the collection of plants made by Mr. T. Kässner chiefly along the railway from Mombasa, in British East Africa, Mr. Spencer Moore selects for description the more interesting species of the Compositæ and Acanthaceæ, and proposes seven new species.—Mr. W. E. Nicholson refers some miniature mosses gathered near Crowborough, Sussex, to *Ephemerum stellatum*, a species first recorded by Monsieur Philibert for specimens collected at Bruailles, in France.—A note on the genus Sematophyllum signifies Mrs. E. G. Britton's approval of the revival of that genus of mosses by Dr. Braithwaite.—Mr. G. C. Druce gives a brief account of the plant establishments on the shingle near Dungeness, and a list of Kentish plants which adds a few new localities to those recorded in Hanbury and Marshall's "Flora of Kent."—Mr. S. T. Dunn, by an inductive method of argument, deduces that only one species of the British representatives of the deadnettles, *Lamium Galeobdolon*, has maintained its original habitat and may be considered naturally indigenous.—A list of West Lancashire plants, by Messrs. J. A. Wheldon and A. Wilson, provides new county records and localities.

SOCIETIES AND ACADEMIES.

London.

Entomological Society, October 1.—The Rev. Canon Fowler, president, in the chair.—Mr. H. St. J. Donisthorpe exhibited specimens of *Dibolia cynoglossi*, taken by him near Pevensey on August 11 last. He said that the beetle, which was figured by Curtis, had not been recorded as British since 1866.—Mr. O. E. Janson exhibited a fine hermaphrodite specimen of *Dryas paphia*, taken in the New Forest by Mr. Herbert Charles on July 28 and recorded in the *Entomologist*, also a melanic specimen of *Papilio demoleus* from Ceylon, in which all the usual marginal and submarginal yellow markings were absent and the discal markings much obscured; on the underside the yellow markings were entirely wanting.—Mr. C. P. Pickett exhibited a ♂ *Callimorpha dominula* with the hind-wings suffused with black and an extra black spot in the centre, the white spot on the fore-wings being absent, and a very large ♀ of the same species, both bred from larvæ found at Walmer at the end of March; also three aberrant specimens of *Triphaena fimbria* bred from larvæ taken at Wood Street during the same month.—Mr. C. O. Waterhouse exhibited specimens of a wasp, *Zethus chalybeus*, and a neuropteron, *Mantispa semihyalina*, received with a collection of Hymenoptera from Rio Janeiro, suggesting a curious case of mimicry.—Mr. F. B. Jennings exhibited specimens of *Hister merdarius*, from Broxbourne, Herts, part of a large colony of this usually scarce species found with *Hister 12-striabus* and other beetles inhabiting a heap of a chemical substance, probably gas-lime, in which also many larvæ, presumably of *Hister merdarius*, and burrows were observed. The soil was warm and moist, and this, and the presence of a quantity of vegetable refuse thrown on the heap, was no doubt the attraction to the Histers to settle there.—Mr. A. J. Chitty exhibited a specimen of *Metoecus paradoxus* with a part of the cells of a nest of *Vespa vulgaris*, in which place the beetle is invariably found. The beetle in the cell tucks in his head, only displaying on the surface the thorax, which is coloured similarly to the face of the wasp. This peculiarity suggests a case of mimicry, and Prof. Poulton said that it fitted in with the case of some other bees and wasps.—Mr. H. Rowland-Brown exhibited on behalf of Mr. G. F. Leigh, of Durban, a ♀ and ♂ specimen of a rare noctuid, *Musgravia Leighi*, Hampson, discovered by him in Natal, and read remarks upon the life-history of the species, communicated by the captor.—Mr. Stanley W. Kemp exhibited two additions to the British list of Coleoptera, *Bembidium argentiolum*, from Lough Neagh, Armagh, and *Laemostenus complanatus*, from the neighbourhood of Dublin, taken in June.—Mr. W. J. Kaye exhibited examples of *Heliconius Lindigii*, *Heliconius antiochus* and *Morpho achilles* from British Guiana with notches taken out of the hind-wings, presumably by birds, to illustrate that these distasteful or warning-coloured species are subject to attack, this helping to show that experimental tasting as propounded by the Müllerian theory of mimicry does exist and go on.—Prof. L. C. Miall, F.R.S., communicated a paper by Mr. T. H. Taylor entitled "The Tracheal System of Simulium."—Prof. Auguste Forel communicated a paper entitled "Descriptions of some Ants from the Rocky Mountains of Canada (Alberta and British Columbia) collected by Edward Whymper."—Dr. T. A. Chapman read a paper entitled "On *Heterogynis paradoxa*."

Royal Microscopical Society, October 15.—Dr. H. Woodward, F.R.S., in the chair.—Prof. T. G. Bonney, F.R.S., gave a demonstration on rock changes in nature's laboratory.

Paris.

Academy of Sciences, October 20.—M. Bouquet de Grye in the chair.—Studies on earth, by M. Th Schloesing. In a previous paper the author has shown that the distribution of the ferric oxide varies with the size of the earth particles. In the present paper a similar result is obtained for the organic matter. The earth was separated into particles of varying fineness by levigation and the amount of organic matter determined in each, the percentage varying from 0·15 in the coarsest particles to 7·8 in the finest. A hypothesis is developed to explain these results, which it is proposed to submit to experimental verification.—On the mode of action of carbonic acid in experimental parthenogenesis, by M. Yves Delage. It has been shown that the addition of carbonic acid communicates to sea water the property of developing parthenogenetically the eggs of Asterias. Its effect is now considered from the points of view of its acidity, anæsthetic action, asphyxiating power and effect on osmotic pressure, and the conclusion is drawn that parthenogenetic agents act as temporary poisons. Carbonic acid is a perfect agent because it completely poisons the eggs, but its action is absolutely temporary, and after its elimination the protoplasm is unchanged.—On some parasitic protozoa in *Damonia Reevesii*, by MM. A. Laveran and F. Mesnil.—On the problem of the brachistochrone, by M. Haton de la Goupillière.—Remarks by M. R. Zeiller on his note in *Palaeontologia Indica* entitled

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"Observations on some Fossil Plants of the Lower Gondwanas."—Remarks by M. Dubail on a volcanic eruption at the island of Torishima, Japan.—On the formation of liquid drops and Tate's laws, by MM. Ph. A. Guye and F. Louis Perrot. The formation of drops of water, benzene and aniline issuing from a capillary tube has been studied photographically by means of the kinematograph. The photographs were taken under two conditions, one in which the drops were formed slowly (statical drops) and the other in which the rate of growth was increased (dynamical drops), and a plate is given showing a typical set of the forms observed in each case. The separation of the drop offers a great analogy with the rupture of metallic wires under traction; the rigidity of the liquid is consequently one of the elements of the problem. The authors conclude that the laws of Tate do not correspond to the facts observed, and hence should be abandoned.—On the elastic parameters of silk fibres, by M. F. Beaulard. In spite of the frequent use of silk fibres in bifilar suspensions, the elastic properties of this substance do not appear to have been determined. In the course of the experiments it was found that silk fibre is affected by hysteresis and undergoes permanent deformations.—Thin metallic films obtained by kathode projection, by M. L. Houllevigue. Mirrors of platinum, palladium, iron, nickel, cobalt, copper and bismuth have been prepared by this method, but no trace of deposit could be obtained from carbon. A bismuth film prepared in this way and placed normally in a strong magnetic field showed no variation in its electrical resistance; from this it would appear that bismuth obtained by kathode projection is absolutely amorphous. Transparent films of iron placed normally in an electromagnetic field showed the existence of a magnetic rotatory power without difficulty.—The action of mixed organomagnesium compounds on the esters of ketonic acids, by M. V. Grignard. The interaction of CH_3MgI with isoamyl pyruvate, ethyl phenylglyoxylate, ethyl levulate and ethyl acetosuccinate has been studied, and brief descriptions of the resulting products are given.—On the derivatives of ethyl pyruvylpyruvate, by M. L. J. Simon. A substance to which the constitution of ethyl pyruvylpyruvate has been assigned is produced by the consecutive action of aniline and strong sulphuric acid upon ethyl pyruvate. In order to demonstrate clearly the ketonic nature of this substance, its interaction with phenylhydrazine has been studied. Two isomeric hydrazones are produced, the preparation and properties of which are fully described.—The germination of the spores of *Sterigmatocystis nigra* in the trachea of some birds, by M. Pierre Lesage.—Experiments on the germination of pollen grains in the presence of stigmata, by M. Pierre Paul Richer. The pollen of a certain number of species, which do not germinate in pure water, germinate if stigmata of the same, or closely allied, species be added.

DIARY OF SOCIETIES.

FRIDAY, OCTOBER 31.

PHYSICAL SOCIETY, at 5 p.m.—On the existence of a Relationship between the Spectra of some Elements and the Squares of their Atomic Weights: Dr. W. Marshall Watts.—The Size of Atoms: H. V. Ridout.—Exhibition of "Vacuum Calorimeters." Prof. H. L. Callendar, F.R.S.

INSTITUTION OF MECHANICAL ENGINEERS, at 8 (Extra Meeting).—Discussion of the Paper on Oil Motor Cars of 1902: Captain C. C. Longridge.

MONDAY, NOVEMBER 3.

SOCIETY OF CHEMICAL INDUSTRY, at 8.—Preliminary Investigation of the Chemical Changes produced by various Reagents on Guttapercha: Sir William Ramsay, K.C.B., F.R.S.—Also, *time permitting*, The Reduction of Ammoniacal Silver Solutions by Organic Substances: Dr. G. T. Morgan.—A simple Qualitative Test for Bromides and Iodides: Dr. F. Mollwo Perkin.—The Influence of Impurities on the Specific Gravity of Sulphuric Acid: Arthur Marshall.

SOCIETY OF ENGINEERS (Royal United Service Institution), at 7.30.—Effect of Segregation on the Strength of Steel Rails: Thomas Andrews, F.R.S.

TUESDAY, NOVEMBER 4.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Address by the President, and presentation of Medals and Prizes awarded by the Council.

ZOOLOGICAL SOCIETY, at 8.30.—An Account of Recent Palæontological Discoveries in Egypt: Dr. C. W. Andrews.—On the Classification of the Fishes of the Suborder Plectognathi, with Notes and Descriptions of New Species from Specimens in the British Museum: C. Tate Regan.—On the Transformations of *Papilio dardanus* and *Philampelus megaera* and on two new Species of South-African Heterocera: Lieut.-Colonel J. Malcolm Fawcett.

WEDNESDAY, NOVEMBER 5.

COLD STORAGE AND ICE ASSOCIATION (Institution of Mechanical Engineers), at 8.—The Technical Application of Liquid Air: Dr. Carl Linde.

SOCIETY OF PUBLIC ANALYSTS, at 8.—(1) The Reactions of the Alkaloids of Ipecacuanha; (2) The Analysis of Preparations containing Opium: Alfred H. Allen.—The Estimation of Salicylic Acid: Sidney Harvey.—Volatility of Aqueous Solutions of Acetic Acid: William Chattaway.

GEOLOGICAL SOCIETY, at 8.—The Fossil Flora of the Cumberland Coalfield, and the Palæobotanical Evidence with regard to the Age of the Beds: E. A. Newell Arber.—Notes on Mr. E. A. Newell Arber's paper on the Clarke Collection of Fossil Plants from New South Wales: Dr. F. Kurtz.—On a New Boring at Gaythorpe (Lincolnshire): Henry Preston.

ENTOMOLOGICAL SOCIETY, at 8.—New Indian Hymenoptera: Major C. G. Nurse.—Notes on *Drilus flavescens*, Rossi: L. R. Crawshay.—New Species of Indian Chrysididæ: Major C. G. Nurse.

THURSDAY, NOVEMBER 6.

LINNEAN SOCIETY, at 8.—Notes on a Natural History Journey to Chile: H. J. Elwes, F.R.S.

RÖNTGEN SOCIETY, at 8.30.—Address by the President, Mr. Herbert Jackson.

CHEMICAL SOCIETY, at 8.—Di-Indigotine: J. Moir.—Note on the Localisation of Phosphates in the Sugar Cane: C. H. G. Sprankling.—The Specific Heats of Gases: H. Crompton.—On the Non-existence of the Gaseous Sulphide of Carbon described by Deninger: E. J. Russell and N. Smith.—The Action of Nitric Acid on Bromophenolic Compounds: W. Robertson.—Hydroxyoxamides. Part II.: R. H. Pickard, C. Allen, W. A. Bowdler and W. Carter.—3:5-Dichlor-*o*-xylene and 3:5-Dichlor-*o*-phthalic Acid: A. W. Crossley and H. R. Le Sueur.—Isometric Anhydrous Sulphates of the Form $M''SO_4,R'_2SO_4$: F. R. Mallet.—The Catalytic Racemisation of Amygdaline: J. W. Walker.—The Combination of Carbon Monoxide with Chlorine under the Influence of Light: G. Dyson and A. Harden.—The Constituents of Commercial Chrysarobin: H. A. D. Jowett and C. E. Potter.

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